KORABEL'SHCHIKOV, Nikolay Ivanovich, kand.tekhn.nauk; KUT'IN, L.I.,
retsenzent; SHIMKO, K.N., retsenzent; OVCHINNIKOV, A.I.,
red.; SHLENNIKOVA, Z.V., red.izd-va; YERMAKOVA, T.T.,
tekhn.red.

[Steam distribution in marine steam engines] Paroraspredelenie
sudovykh parovykh mashin. Moskva, Izd-vo "Rechnoi transport,"
1959. 284 p.   (MIRA 13:2)
        (Boilers, Marine)   (Marine engines)

ANTONOVICH, Sergey Aleksandrovich, kand.tekhn.nauk; NOVIKOV, Viktor
Vasil'yevich, inzh.; RENSKIY, Nikolay Mikhaylovich, inzh.;
FOMKINSKIY, Leonid Ivanovich, inzh.; SHIMKO, Konstantin
Nikolayevich, kand.tekhn.nauk. Prinimal uchastiye SMANTSER, A.I.,
inzh. AL'BANOV, V.M., inzh., nauchnyy red.; LAKHANIN, V.V., prof.,
doktor tekhn.nauk, retsenzent; KULIKOVSKIY, P.P., kand.tekhn.nauk,
retsenzent [deceased]; STEPANYUK, Ye.I., kand.tekhn.nauk, retsenzent;
PAVLOV, A.V., inzh., retsenzent; PETROV, M.D., inzh., retsenzent;
ROMANOV, P.A., inzh., retsenzent; SOBOLEV, P.I., inzh., retsenzent;
VITASHKINA, S.A., red.izd-va; YERMAKOVA, T.T., tekhn.red.; VOLCHOK,
K.M., tekhn.red.

[Handbook for marine heat engineers] Spravochnik sudovogo teplotekh-
nika. Sost. S.A.Antonovich i dr. Leningrad, Izd-vo "Rechnoi transport,"
Leningr.otd-nie, 1960. 679 p.   (MIRA 14:3)
 (Marine engineering)   (Heat engineering)

LEONT'YEVSKIY, Yevgeniy Sergeyevich; RENSKIY, Nikolay Mikhaylovich;
    KRYLOV, V.I., retsenzent; SHIMKO, K.N., retsenzent; GLADYSHEV,
    V.F., retsenzent; OSIPOV, L.L., retsenzent; TAREYEV, V.M.,
    prof.,doktor tekhn. nauk, red.; VITASHKINA, S.A., red. izd-va;
    BODROVA, V.A., tekhn. red.

[Marine engineering handbook for the operation of motorships]
Spravochnik dlia mekhanika i motorista teplokhoda. Sost. E.S.
Leont'evskii i N.M.Renskii. Moskva, Izd-vo "Rechnoi transport,"
1961. 558 p.   (MIRA 15:2)
            (Marine engineering) (Motorships)

SYRMAY, A.G., nauchnyy sotr.; OBERMEYSTER, A.M., nauchnyy sotr.;
IRONFMAN, A.I., nauchnyy sotr.; SHIMKO, K.N., kand. tekhn.
nauk; PANAKHONSKIY, B.M., kand. ekon. nauk. Prinimali ucha-
stiye: ZHURAILOV, V.I., nauchnyy sotr.; ZUBKOV, M.I., nauchnyy
sotr.; SHVARTS, G.L., nauchnyy sotr.; MIKHEYEV, A.P., doktor
tekhn. nauk, prof., otv. red.; BYKOV, I.K., red. izd-va;
DOROKHINA, I., tekhn. red.

[Water and air transportation in capitalist countries: trends in
the development of equipment] Vodnyi i vozdushnyi transport kapita-
listicheskikh stran; tendentsii razvitiia tekhnicheskikh sredstv.
Moskva, Izd-vo Akad.nauk SSSR, 1961. 350 p.   (MIRA 15:1)

1. Akademiya nauk SSSR. Institut kompleksnykh transportnykh pro-
blem.
                (Merchant marine)   (Aeronautics, Commercial)

SOV/170-59-6-10/20

24(8)

AUTHORS: Shimko, N.G., Yushkov, P.P.

TITLE: A Hankel Final Integral Transformation

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Nr 6, pp 72-79 (USSR)

ABSTRACT: For final integral transformations Sneddon /Refs 2, 3/ introduced
kernels, which include Bessel functions, in order to study the
physical state of bodies possessing cylindrical symmetry. The
transformations of this kind he denoted as Hankel final integral
transformations. A general method for solving certain boundary-
value problems with separable variables was proposed by G.A. Grin-
berg /Refs 6, 7/. The authors describe three cases of Hankel
final integral transformations which were considered by Sneddon
and bring them to the form which could be applied for solving the
problems on thermal state of a hollow cylinder. The inner surface
of this cylinder is maintained at a given temperature, and the
outer surface is thermally insulated. The Hankel final integral
transformation is then expressed by Formula 3.13 and the corres-
ponding conversion formula is 3.14. This integral transformation
is used in the solution of the problem of heat conductivity for a

Card 1/2

IVANOV, A.V. ; SHIMKO, N.G.

Problem on heat conductivity for a lamellarly homogenous medium.
Trudy Inst. energ. AN BSSR no.9:77-91 '59.   (MIRA 13:10)
               (Heat--Conduction)

11.9200
24.5200
10.4100   22071230 2615

8.759

S/170/60/003/010/004/023
B019/B054

AUTHOR: Shimko, N. G.

TITLE: The Finite Hankel Integral Transform for a Hollow Cylinder

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 10,
pp. 39 - 46

TEXT: The determination of the temperature of an infinitely long, hol-
low cylinder in the presence of a heat source leads to the differential
equation (1): $\partial t/\partial \tau = a(\partial^2 t/\partial r^2 + \partial t/r\partial r) + F(r,\tau)$, where a, the thermal
diffusivity coefficient, and $F(r,\tau)$ are given. In an extensive expansion
with the aid of the finite Hankel integral transform

$$H_o\left[f(r)\right] = \bar{f}(p) = \int_{r_o}^{R} rf(r)W(pr)dr \quad (5),$$ the author finds the function

$t(r,\tau)$ for the initial and boundary conditions (2) - (4). $W(pr)$ is de-
termined from the integral equation (6):

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The Finite Hankel Integral Transform for a
Hollow Cylinder

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B019/B054

$$\int_{r_0}^{R} r(\partial^2 t/\partial r^2 + \partial t/r\partial r)W(pr)dr = -p^2 t(p,\tau) + K(p,\tau). \quad (5) \text{ is exactly for-}$$

mulated, and assumes the form of (24):

$$H_0\left[f(r)\right] = \tilde{f}(p_k) = \int_{r_0}^{R} rf(r) V_0(p_k r)dr, \text{ where } V_0 \text{ is determined from formu-}$$

la (13). The author obtains the conversion formula (25), whose solution
(31) reads:

$$t(r,\tau) = \pi^2/2 \sum_{k=1}^{\infty} p_k^2 \left[\beta_2 J_0(p_k R) - \alpha_2 p_k J_1(p_k R)\right]^2 \tilde{t}(p_k,\tau)V_0(p_k,\tau)$$

$$\times \left\{(\alpha_2^2 p_k^2 + \beta_2^2)\left[\beta_1 J_0(p_k r_0) - \alpha_1 p_k J_1(p_k r_0)\right]^2 - (\alpha_1^2 p_k^2 + \beta_1^2)\left[\beta_2 J_0(p_k R)\right.\right.$$

$$\left.\left. - \alpha_2 p_k J_1(p_k R)\right]^2\right\}^{-1}. \text{ There are 4 references: 2 Soviet, 1 British, and}$$

1 German.

Card 2/3

81259

The Finite Hankel Integral Transform for a   S/170/60/003/010/004/023
Hollow Cylinder   B019/B054

ASSOCIATION: Politekhnicheskiy institut, g. Voronezh (Polytechnic
               Institute, Voronezh)

SUBMITTED: September 22, 1959

Card 3/3

SHIMKO, N. G.

"The Heat Conductivity Problem for Uniformly Laminated
Cylinders With an Incomplete Contact."

Report submitted for the Conference on Heat and Mass Transfer, Minsk, BSSR,
June 1961.

Shashkov, A. G.

"The contact problem for a system of heat- and mass-transfer equations."

report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12 May 1964.

Voronezh Polytechnical Inst.

L 41778-65

8/0170/65/008/001/0072/0078

ACCESSION NR: AP5005766

AUTHOR: Cherpakov, P. V.; Shimko, N. G.

TITLE: On the regular thermal regime in a multi-layer medium

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 8, no. 1, 1965, 72-78

TOPIC TAGS: multilayer medium, thermal regime, regular thermal regime, interlayer contact

ABSTRACT: The regular thermal regime in a multi-layer medium is considered for both perfect and imperfect contact between the layers. Each layer is assumed to have a constant coefficient of temperature conductivity, and the general solution is made up of the individual solutions of the thermal conductivity equation for each layer separately, with suitable boundary conditions. The solution is obtained in the form of a series, in which the first terms is exponential and corresponds to the regular regime. The case of imperfect contact is considered first for two media with free heat exchange on the outer surfaces and imperfect contact at the separation boundary. An eigenfunction expansion is obtained for this case by an integral-transform method, and an expression is obtained for the time neces-

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ACCESSION NR: AP5005766

sary for the regular regime to set in. Certain inequalities are derived between the boundary functions and the source functions. The possibility of employing experimental methods to investigate the regular regime in a multi-layer medium is discussed. Orig. art. has: 25 formulas.

ASSOCIATION: Gosudarstvennyy universitet, Voronezh (Voronezh State University)

SUBMITTED: 14Apr64   ENCL: 00   SUB CODE: TD

NR REF SOV: 006   OTHER: 001

Card 2/2

POPOV, I.I., SHIMKO, N.G.

Regular thermal regime in a multilayer medium. Inzh.-fiz.
zhur. 8 no.1:72-78 Ja '65.   (MIRA 18.3)

1. Gosudarstvennyy universitet, Voronezh.

POLOVENKO, I.S., kandidat sel'skokhozyaystvennykh nauk; SHIMKO, N.I.,
agronom-ekonovist; KALASHNIKOVA, V.S., redaktor; VESKOVA, Ye.I.,
tekhnicheskiy redaktor

[The new planning system in action] Novyi poriadok planirovaniia v
deistvii. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956. 331 p. (MIRA 9:11)
(Agricultural administration)

POLOVENKO, I.S., kand. ekon. nauk,; SHIMKO,N.I., agronom-ekonomist,;
    ARTYKOV, A., BORISOV, V.A., GONCHAROV, A.I., KLOTS,Ye.A., SPERANSKIY,
    V.Z., SHAPIRO, L.L.; KALASHNIKOVA, V.S.,red.; BALLOD, A.I., tekhn. red.

    [Experience in introducing a new procedure in planning] Opyt
    vnedreniia novogo poriadka planitovaniia. Moskva, Gos. izd-vo
    sel'khoz. lit-ry, 1958. 308 p.   (MIRA 11:11)
                        (Agriculture)

SHIMKO, N.I., POLOVENKO, I.S.

[Overtake and surpass the U.S.A. in the output of livestock products] Dognat' i peregnat' SSHA po proizvodstvu produktov zhivotnovodstva. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1958. 469 p.

(MIRA 11:10)

(Stock and stockbreeding)

KUTSKIY, A.I.; LEONKOV, A.M.; GEYLER, L.B.; SLEPYAN, Ya.Yu.; MOSEYEV, I.V.; SOBOLEV, A.I.; TINYAKOV, N.A.; VOLKOV, N.P.; BOTVINNIK, Ya.Ye.; BARABANOV, M.Ye.; BRAZGOVKA, V.A.; PRELIS, G.B.; KUZOVNIKOVA, Ye.A.; KUZ'MIN, Yu.P.; SHIDKO, N.I.; PALLADIY, N.L.; KHUTSKIY, G.I.

G.I. Dobkin; obituary. Izv. vys. ucheb. zav.; energ. no.4:128 Ap '58.
(Dobkin, Grigorii Izrailevich, 1892-1958)   (MIRA 11:6)

SHIMKO, N.I.; POLOVENKO, I.S., kand.ekonom.nauk, starshiy nauchnyy
sotrudnik; BANNIKOV, N.A., red.; TERESHCHENKO, N.I., red.;
ZUBRILINA, Z.P., tekhn.red.

[Overtake and surpass the United States in the output of
livestock products] Dognat' i peregnat' SShA po proizvodstvu
produktov zhivotnovodstva. Izd.2., dop. i perer. Moskva, Gos.
izd-vo sel'khoz.lit-ry, 1959. 500 p.   (MIRA 12:11)

1. Rukovoditel' otdela opornykh punktov i korrespondentskoy seti
Vsesoyuznogo nauchno-issledovatel'skogo instituta ekonomiki
sel'skogo khozyaystva (for Shimko).
        (Stock and stockbreeding)

TULUPNIKOV, L.A.; SOLOV'YEV, A.V.; BATCVA, N.T.; GAVRILOV, V.I., kand.
ekonom.nauk; SHIMKO, N.I.; POLOVENKO, I.S., kand.ekonom.nauk;
POTAPOV, Kh.Ie., red.; OVCHINNIKOV, N.G., red.; PONOMAREVA, A.A.,
tekhn.red.

[Problems pertaining to long-range planning and systems of
management on collective and state farms] Voprosy perspektivnogo
planirovaniia i sistemy vedeniia khoziaistva v kolkhozakh i sovkho-
zakh. Moskva, Gosplanizdat, 1960. 681 p.

                                        (MIRA 14:3)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut ekonomiki
sel'skogo khozyaystva. 2. Chlen-korrespondent Vsesoyuznoy akademii
sel'skokhozyaystvennykh nauk imeni V.I.Lenina; direktor Vsesoyuznogo
nauchno-issledovatel'skogo instituta ekonomiki sel'skogo khozyaystva
(for Tulupnikov). 3. Zamestitel' direktora Vsesoyuznogo nauchno-
issledovatel'skogo instituta ekonomiki sel'skogo khozyaystva (for
Gavrilov). 4. Rukovoditel' otdela Vsesoyuznogo nauchno-issledovatel'-
skogo instituta ekonomiki sel'skogo khozyaystva (for Polovenko).
    (Collective farms)   (State farms)

KHLUDENEV, Aleksandr Ivanovich, kand. ekon. nauk; SHIMKO, Nikolay
Ivanovich, kand. ekon. nauk; LEONOVA, T.S., red.;
NAZAROVA, A.S., tekhn. red.

[The pecework-bonus wage system on state farms; from the
practice of state farms in Moscow Province]Akkordno-
premial'naia oplata truda v sovkhozakh; iz opyta sovkho-
zov Moskovskoi oblasti. Moskva, Izd-vo "Znanie," 1962.
39 p. (Novoe v zhizni, nauke, tekhnike. V Seriia: Sel'-
skoe khoziaistvo, no.20)   (MIRA 15:10)
          (Moscow Province--Agricultural wages)

ACCESSION NR: AP4039632

AUTHOR: Shimko, V. I. (Rostov-on-Don)

TITLE: On the question of the construction of nonrigid closed ribbed surfaces of rotation

TOPIC TAGS: surface geometry, ribbed surface, operations research, homogeneous equation, surface generating function

ABSTRACT: The author proved the existence of nonrigid closed ribbed surfaces of rotation having a plane of symmetry perpendicular to the axis and admitting two linearly independent infinitely small curves for which the meridian of each surface consists of four segments. Denoting the surface meridian as $r = r(u)$, the author defined $r(u)$ as

$$
r(u) = \begin{cases}
a_1 u, & u \in [0;\, a_1], \\
a_2(u - a_1) + a_1 a_1, & u \in [a_1;\, a_1 + a_2], \\
a_3(u - a_1 - a_2) + a_1 a_1 + a_2 a_2, & u \in [a_1 + a_2;\, a_1 + a_2 + a_3], \\
a_4(u - a_1 - a_2 - a_3) + \\
\quad + a_1 a_1 + a_2 a_2 + a_3 a_3, & u \in [a_1 + a_2 + a_3;\, a_1 + a_2 + a_3 + a_4],
\end{cases}
$$

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ACCESSION NR: AP4039632

where a_i and α_i satisfy the relationship

$$a_i \neq a_{i+1} \ (i = 1, 2, 3); \ \sum_{s=1}^{i} a_s \alpha_s > 0 \quad (i = 1, 2, 3); \ \sum_{s=1}^{4} a_s \alpha_s = 0.$$

He defines the surface generating function $\chi_k(u)$ as

$$\chi_k(u) = \begin{cases} A_{1,k} u, & u \in [0; \ a_1], \\ A_{2,k}(u - a_1) + A_{1,k} a_1, & u \in [a_1; \ a_1 + a_2], \\ A_{3,k}(u - a_1 - a_2) + A_{1,k} a_1 + \\ \qquad + A_{2,k} a_2 & u \in [a_1 + a_2; \ a_1 + a_2 + a_3]. \\ A_{3,k}(u - a_1 - a_2 - a_3) + \\ \qquad + A_{1,k} a_1 + A_{2,k} a_2 + A_{3,k} a_3, & u \in [a_1 + a_2 + a_3; \\ \qquad\qquad a_1 + a_2 + a_3 + a_4]. \end{cases}$$

where $A_{i,k} \ (i = 1, 2, 3, 4)$ are yet undetermined constants. Accounting for the initial problem conditions and definitions yielded the equation

$$(k^2 - 1)^2 a_2 a_3 (a_2 - a_1)(a_1 - \alpha_1)(a_4 - \alpha_1) -$$
$$(k^2 - 1)\{(a_2 - \alpha_1)(a_1 \alpha_1 + a_2 \alpha_2)[a_1 \alpha_1 + \alpha_1(a_2 + a_3 + a_4)] +$$
$$+ a_3 \alpha_1 (a_3 - \alpha_1)(a_4 - \alpha_1)(a_1 + a_2)\} + \alpha_1 \alpha_4 (a_1 \alpha_1 + a_2 \alpha_2) \times$$
$$\times (a_1 + a_2 + a_3 + a_4) = 0.$$

It is demonstrated how surface parameters can be selected so that two linearly

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ACCESSION NR: AP4039632

independent infinitely small curves are allowed according to the author's hypothesis. Two related theorems were proposed and proved: 1) If α_2 and a_2 for some integer $k \geq 2$ simultaneously satisfy any one of the systems of conditions:

$$\text{a)}\quad a_2 > \frac{k^2}{k^2-1}; \quad a_3 = \frac{1}{a_3[(k^2-1)a_2 - k^2]},$$

$$\text{b)}\quad a_2 > \frac{k^2}{k-1}; \quad a_3 = \frac{1}{(k^2-1)a_2 - k},$$

$$\text{c)}\quad a_3 < 0; \quad a_2 = \frac{1}{a_3[(k^2-1)a_3 - k^2]},$$

$$\text{d)}\quad 0 < a_2 < \frac{1}{k^2-1}; \quad a_2 = \frac{1}{a_3[(k^2-1)a_3 - k^2]},$$

then surface S_4 is nonrigid (S_4 is the ribbed surface of rotation whose plane of symmetry is perpendicular to the axis); and 2) if α_2 and a_2 for some integers $l \geq 2$ and $m > l$ satisfy the conditions $a_2 = \frac{m^2}{l^2-1}; \quad a_1 = \frac{l^2-1}{m^2(m^2-l^2)}$, then surface S_4 is nonrigid and allows two linearly independent infinitely small curves. Numerical examples of application of both theorems are given. Orig. art. has: 12 equations.

Card 3/4

ACCESSION NR: AP4039632

ASSOCIATION: none

SUBMITTED: 17Mar62

SUB CODE: MA

NO REF SOV: 002

ENCL: 00

OTHER: 000

Card 4/4

L 4074-66   EWT(m)/EWP(i)/EWP(t)/EWP(b)   IJP(c)   JD/JG
ACCESSION NR: AP5025395   UR/0181/65/007/010/3106/3108

AUTHOR: Kovarskiy, V. Ya.; Shimko, V. I.

TITLE: Controlled generation of relaxation oscillations in n-type epitaxial silicon with a point contact

SOURCE: Fizika tverdogo tela, v. 7, no. 10, 1965, 3106-3108

TOPIC TAGS: silicon semiconductor, epitaxial growing, photosensitivity

ABSTRACT: Generation of relaxation oscillations is studied in a point contact on epitaxial layers of n-silicon grown by the chloride method on a p-silicon substrate. Epitaxial layers 15—30 μ in thickness were used with resistivities of 0.1 and 4.5 $\Omega \cdot cm$, that of the substrate being 7.5 $\Omega \cdot cm$. Vacuum vaporization was used for applying a ring-shaped ohmic contact (Au + 1% Sb) to the surface of the epitaxial film. The point contact—an electrolytically sharpened tungsten needle—was located in the central orifice of the ohmic contact. Current oscillations were generated on the negative section of the reverse branch of the current-voltage curve for the point contact. The frequency, amplitude, and shape of the oscillations remained constant in spite of variations in the load resistance and disconnection of the intermediate

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L 4074-66

ACCESSION NR: AP5025395   3

amplifier. In studying the nature of the generation process, provision was made for stabilizing generation and controlling the generated oscillations by bias of the film-substrate potential barrier. Back bias voltage was applied between the substrate and the ohmic contact and the signal was taken off from a load connected between the point contact and the p-silicon. Thus, the critical voltage necessary for generation could be maintained automatically. The pulse duration could be varied from several dozen to a few μsec by varying the bias voltage in the 5—20 and 17—90 volt ranges for layers with resistivities of 0.01 and 4.5 $\Omega \cdot cm$ respectively. The threshold voltage for emission was reduced by white-light illumination on the surface of the epitaxial layer. At a certain maximum light intensity, the oscillations were cut off. A relationship was observed between the period of the oscillations and the energy of the incident radiation. The generation of relaxation oscillations in epitaxial silicon is attributed to excitation of impurity centers which reduces the surface potential barrier of the point contact with subsequent capture of current carriers by surface states and a resultant increase in the potential barrier. The density of the surface states in the vicinity of the point contact was found to be of the order of 10^{14} cm^2 from measurements of the oscillation period as a function of the external capacitance connected to the point junction. "In conclusion, the authors are grateful to K. I. Britsyn for constant interest in the work." Orig. art. has: 2 figures.   #4.55   [14]

Card 2/3

L 4074-66
ACCESSION NR: AP5025395

ASSOCIATION: none

SUBMITTED: 28Apr65   ENCL: 00   SUB CODE: SS

NO REF SOV: 003   OTHER: 002   ATD PRESS: 4/27

Card 3/3

L 2211-66   EWT(1)/EWT(m)/EWP(1)/T/EWP(t)/EWP(b)/EWA(h)   IJP(c)   JD/AT
ACCESSION NR: AP5017347   UR/0181/65/007/007/2264/2265

AUTHOR: Kovarskiy, V. Ya.; Shimko, V. I.

TITLE: Measurement of the distribution of potential in epitaxial p-n structures
by the moving-light-spot method

SOURCE: Fizika tverdogo tela, v. 7, no. 7, 1965, 2264-2265

TOPIC TAGS: pn junction, epitaxial growing, electric potential

ABSTRACT: The authors propose a simple procedure for determining the depth of an
epitaxial p-n junction and its potential structure, by using the moving-light-spot
method (G. Adam, Physica v. 20, 1037, 1954). The measurement technique is de-
scribed briefly. The measurements were made on silicon epitaxial layers grown by
the chloride method on substrates of silicon of opposite type of conductivity. The
layers were 10--50 μ thick. The potential distribution in the film was obtained
by measuring the dependence of the amplitude of the photo-response on the collect-
or as a function of the inverse bias applied between the collector and a ring
electrode. The depth of the epitaxial layer could be determined without a ring
contact by plotting the amplitude of the collector photo-response as a function of
the voltage applied between the collector and the substrate. The procedure was
verified for several samples and yielded satisfactory agreement with results ob-

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L 2211-66

ACCESSION NR: AP5017347

tained with an electron microscope. "The authors thank K. I. Britayn for continu-
ous interest in the work, Ye. A. Antonova for supplying the samples, and L. A.
Panin for the electron-microscope measurements." Orig. art. has: 2 figures and
1 formula.

ASSOCIATION: none

SUBMITTED: 10Mar65   ENCL: 00   SUB CODE: SS

NR REF SOV: 001   OTHER: 005

Card 2/2

SEDAKOV, N.N.; SHIMKO, V.M.

Leading detachment of power engineering construction workers.
Energ. stroi. no.37:5-7 '63.   (MIRA 17:6)

1. Sekretar' partiynogo byuro Pridneprovskoy gosudarstvennoy
rayonnoy elektrostantsii (for Sedakov). 2. Sekretar' komiteta
Vsesoyuznogo Leninskogo kommunisticheskogo soyuza molodezhi Pri-
dneprovskoy gosudarstvennoy rayonnoy elektrostantsii (for
Shimko).

SHIMKO, V.V.

Novocaine block in some diseases of the upper respiratory tract.
Vest.oto-rin. 18 no.5:122-123 S-O '56.   (MLRA 9:11)

1. Iz kliniki bolezney ukha, gorla i nosa (zav. - dotsent N.T.
Yevstaf'yev) Belorusskogo instituta usovershenstvovaniya vrachey.
        (RESPIRATORY ORGANS--DISEASES)
        (NOVOCAINE)

SH.TO, ..., assistant; FODORSHIN, Ia.L., klinicheskiy ordinator

Treatment of chronic purlent otitis of the middle ear.
Zdrav. Belor. 6 no. 7:40-42 Je '60.   (MIRA 13:8)

1. Iz kafedry ukha, gorla, nosa Instituta usovershenstvovaniya
vrachey.

(EAR—DISEASES)

SHIMKO, V.V.

Otogenous diseases of the cerebellum. Zdrav. Belor. 6 no.9:39-40
S '60.   (MIRA 13:9)

1. Iz kliniki ukha, nosa i gorla (zaveduyushchiy kafedroy - dotsent
N.T. Yefstaf'yev) Instituta usovershenstvovaniya vrachey.
                    (CEREBELLUM—ABSCESS)

SHIMO, V.V.; PODOKSHIK, Ya.L.

Otogenic brain abscesses. Zdrav.Bel. no.3:36-38 '62.

(MIRA 15:5)

1. Iz kafedry ukha, gorla i nosa (zaveduyushchiy kafedroy –
dotsent K.T. Yevstaf'yev) Belorusskogo instituta usovershenst-
vovaniya vrachey (direktor – dotsent N.Ye. Savchenko).
            (BRAIN—ABSCESS) (EAR—DISEASES)

SHIMKO, YA, D., (Assistant Veterinary Surgeon, Timashev Raion, Krashodar Krai)

Treatment of gangrene with large penicillin

Veterinariya vol. 38, no. 10, October 1961, pp. 81-89

SHIMKO, Ye. M.   166T26

USSR/Fuel - Coke, By-Products of   Jul 50

"Accelerated Method for Determination of the Soften-
ing Temperature of Pitch," Ye. M. Shimko, Dneprod-
zerzhinsk Coke By-Products Plant

"Zavod Lab" Vol XVI, No 7, pp 881-882

Suggests new method of writing on a heated metal
plate with pitch. Two methods developed for heat-
ing plate: with hot water and with steam. Gives
comparative data on softening temperature of pitch,
obtained by standard method and by new method.

166T26

AUTHOR: Shimko, Ye.M.   68-12-18/25

TITLE: On the Problem of Dephenolising Effluent Water by the
          Steam Method (K voprosu obesfenolivaniya stochnykh vod
          parovym metodom)

PERIODICAL: Koks i Khimiya, 1957, No.12, pp. 44 - 45 (USSR).

ABSTRACT: Some remarks on the previously published paper of A.M.
          Grinberg on the subject (Koks i Khimiya, 1957, No.3) are
          given. It is pointed out that the efficiency of dephenolising
          on the Dneprodzerzhinsk Works sharply increased when the filling
          of the absorber was changed from coke to metal rings (from
          65.5% to 82%); moreover, it was established that 4 and 9% of
          free alkali give the same result in the removal of phenols.
          There is 1 table.

ASSOCIATION: Dneprodzerzhinskiy koksokhimicheskiy zavod
              (Dneprodzerzhinsk Coke-chemical Plant).

AVAILABLE: Library of Congress
Card 1/1

AUTHORS: Shimko, Ye.M. and Kostroma, G.N.

TITLE: On the Problem of Coefficients of Recovery and Processing
            of Crude Benzole (K voprosu koeffitsiyentov ulavlivaniya
            i pererabotki syrogo benzola)

PERIODICAL: Koks i Khimiya, 1959, Nr 1, pp 41 - 42 (USSR)

ABSTRACT: A comparison of benzole losses of the below plant before
            and after the transfer of the benzole recovery shop
            to creosote oil and improved cooling of the absorption
            oil is given (Table 1). It is pointed out that although
            benzole losses were decreased, the yield of benzole per
            ton of coal remained unchanged (at the same composition
            of the coal blend). A similar comparison of the yield of
            pure products (Table 2) indicated that the yield of pure
            products increased by about 2% with a simultaneous decrease
            in the yield of solvent naphtha. The losses of solvent
            naphtha are calculated on a difference between the amount
            of this component which can be obtained on the bases of
            analysis and the amount of the product actually produced.
            As the methods of analysis of the raw benzole (the amount
            distilling off to 180 °C) were changed during the period
            and the latest method ChMTU 10108-55 gave results lower
Card1/2   than those obtained on the plant, the authors conclude

SOV/68-59-1-11/26

On the Problem of Coefficients of Recovery and Processing of Crude Benzole

that on processing losses of benzole increased and not of solvent naphtha. It is therefore proposed to replace the ChMTU standard method by a new one which will give results corresponding to the actual plant operation.
There are 3 tables.

ASSOCIATION: Dneprodzerzhinskiy koksokhimicheskiy zavod
(Dneprodzerzhinsk Coking Works)

Card 2/2

TREKHDENOV, V.I.; SHIMKO, Yu.K.; TSUKKERMAN, L.P., retsenzent;
      NOVIKAS, M.N., inzh., red.; BOBROVA, Ye.N., tekhn.red.

      [Platform passenger train indicator] Ukazatel' otpravle-
      niia passazhirskikh poezdov. Moskva, Transzheldorizdat,
      1963. 66 p.   (MIRA 17:2)

SHIMKOV, M.I.

Yarn steaming in PK-1 and PK-6 apparatus. Tekst. prom. 18 no.2:
60-61 F '58.   (MIRA 13:3)

1.Zaveduyushchiy otdelochnoy fabrikoy Chimkentskogo khlopchatobumazhnogo
kombinata.
          (Textile finishing)

CZECHOSLOVAKIA / Human and Animal Morphology (Normal and   S
                Pathological). Nervous System.
                Peripheral Nervous System.

Abs Jour   : Ref Zhur - Biologiya, No 4, 1959, No. 16933

Author   : Shimkova, Maria
Inst   : Not given
Title   : The Study of Innervation of the Cornea by
              Means of Vital Staining After Some Injuries
              of the Eye

Orig Pub   : Ceskosl. oftamol., 1958, 14, No 3, 190-194

Abstract   : No abstract given

Card 1/1

SHIMKOVICH, A. A., Cand Tech Sci -- "Study of friction in roller bearings. (Experiments on the development of hydro-dynamic theory of lubricating roller bearings.)" Khar'kov, 1961. (Min of Higher and Sec Spec Ed UkSSR. Khar'kov Poly-tech Inst im V. I. Lenin) (KL, 8-61, 251)

- 339 -

SHITKOVICH, A.A.

Hydrodynamic theory of the lubrication of roller bearings. Dokl. AN BSSR 4 no.12:510-522 D '60. (MI A 14:2)

1. Belorusskiy institut mekhanizatsii sel'skogo khozyaystva. Predstavleno akademikom AN BSSR V.P.Severaenko.
(Roller bearings)

SHIMKOVICH, V.V., inzh.

Mechanization of the operation of valves on water pipes in the United
States. Vod.i san.tekh. no.2:36-38 F '63.   (MIRA 16:2)
          (United States—Water—Distribution)

SHIMANYICH, T.T.

Control mechanisms for stop fittings in foreign oil-, gas-, and
water pipes. Mash. i neft. obor. no.9:41-43   '64.

(MIRA 17:11)

SHIMKOVICH, V.V., inzh.

Use of electric drive for controlling the shutting off and
regulating equipment of water pipelines. Vod.i san.tekh.
no.12:26-27 D '65.   (MIRA 19:1)

SHIMKOVITS, I.; SHISHKA, K.; GUPKA, M.; VOL'F, Yu.; SMERCHANSKIY, V.;
    SHNORRER, M.

Functional parameters of an apparatus made in Czechoslovakia
for artificial blood circulation. Eksp.khir.i anest. 6
no.3:13-20 '61.   (MIRA 14:10)

(PERFUSION PUMP (HEART))

SHISHKA, K.; SHIMKOVITS, I.; GUBKA, M.; SMRECHANSKIY, V.; SHNORRER, M.

Experience acquired in surgery by the use of an artificial heart
and lungs. Trudy Inst.eksp.i klin.khir.i gemat. AN Gruz. SSSR
10:13-23 '62.   (MIRA 16:2)
(PERFUSION PUMP (HEART))
(CARDIOVASCULAR SYSTEM—SURGERY)

SHIMKOVITS, I.; BOL'F, Yu.; SHISHKA, K.; GUBKA, M.; SMRECHANSKIY, V.;
SHNORRER, M.; ZIMA, P.

Apparatus fo Czech design for artificial blood circulation.
Trudy Inst.eksp.i klin.khir.i gemat. AN Gruz.SSR 10:25-34
'62.   (MIRA 16:2)
                    (CZECHOSLOVAKIA—PERFUSION PUMP (HEART))

SMRECHANSKIY, V.; SHISHKA, K.; SHIMKOVITS, I.; SHNORRER, M.; GUBKA, M.

Some perfusion problems in artificial blood circulation. Trudy
Inst.eksp.i klin.khir.i genat. AN Gruz.SSR 10:35-42 '62.
(MIRA 16:2)

(PERFUSION PUMP (HEART))

GUBKA, M.; SHISHKA, K.; SHIMKOVITS. I.; SMRECHANSKY, V.; SHNORRER, M.

Protection of the myocardium during the prevalence of asystole
in an intracardiac operation by the use of the appaprtus for
artificial blood circulation. Trudy Inst.eksp.i klin.khir. i
gemat. AN Gruz.SSSR 10:57-65 '62.   (MIRA 16:2)
        (HEART—SURGERY)   (BLOOD —CIRCULATION,ARTIFICIAL)

GUBKA, M.; SHISHKA, K.; SHIMKOVITS, I.; SMRECHANSKIY, V.; SHNORRER, M.

Care of the patient following a heart operation with the use
of artificial blood circulation. Trudy Inst.eksp.i klin.khir.
i gemat. AN Gruz.SSR 10:67-72 '62.   (MIRA 16:2)
        (HEART—SURGERY) (BLOOD—CIRCULATION, ARTIFICIAL)
                (POSTOPERATIVE CARE)

SHNORRER, M.; SHISHKA, K.; SHIMKOVITS, I.; GUBKA, M.; SMRECHANSKIY, V.

Changes in coagulation and anticoagulation factors of the blood
in artificial blood circulation. Trudy Inst.eksp.i klin.khir.
i gemat. AN Gruz.SSR 10:73-76 '62.   (MIRA 16:2)
          (BLOOD—COAGULATION) (BLOOD—CIRCULATION, ARTIFICIAL)

GUBKA, M.; SHISHKA, K.; SHIMKOVITS, I.; SMRECHANSKIY, V.; SHNORER, M.

Protection of the myocardium in cardiac arrest during intracardiac interventions with artificial circulation. Khirurgiia 38 no.5: 17-25 My '62.　(MIRA 15:6)

1. Iz otdeleniya eksperimental'noy khirurgii (zav. - akad. K. Shishka) Instituta eksperimental'noy meditsiny Slovatskoy akademii nauk.

(HEART, FAILURE)　(HEART—MUSCLE)
(BLOOD—CIRCULATION, ARTIFICIAL)

SHIMKUS, E.M.

Causes of the fuzzy kidney image in retropneumoperitoneum. Vest.
rent. i rad. 36 no.6:67-69 N-D '61.   (MIRA 15:2)

1. Iz kliniki fakul'tetskoy khirurgii (zav. - prof. P.P.TSarenko)
Krymskogo meditsinskogo instituta (dir. - dotsent S.I.Georgiyevskiy).
        (KIDNEYS—RADIOGRAPHY)   (PNEUMOPERITONEUM, ARTIFICIAL)

SHIMKUS, E.M., kand.med.nauk

Interureteral anastomosis in ectopia of the ureteral orifice.
Urologiia no.6:56-57 '64.   (MIRA 18:11)

1. Klinika fakul'tetskoy khirurgii (ispolnyayushchiy obyazannosti
zaveduyushchego - dotsent V.I.Solov'yev) Krymskogo meditsinskogo
instituta, Simferopol'.

SHIMKUS, G.T.

Ecology and geographical distribution of wild clovers in the
Crimea. Bot.zhur. 45 no.3:436-441 Mr '60.
(MIRA 13:6)

1. Krymskiy gosudarstvennyy pedagogicheskiy institut im.
M.V.Frunze, g.Simferopol'.
(Crimea--Clover)

SHIMKUS, I. Yu.

SHIMKUS, I. Yu. --"Physicomechanical Properties of Marainic Sandy Loams Used in
Foundations for Engineering Structures, in the Northeastern Part of the Lithuanian
SSR." *(Dissertations for Degrees in Science and Engineering Defended at USSR HIGHer
Educational Institutions) Min of Higher Education USSR, Lithuanian Agricultural
Acad, Kaunas, 1955

SO: Knizhnaya Letopis', No. 25, 18 Jun 55

* For Degree of Doctor of Technical Sciences

KOCHENOV, A.V.; BATURIN, G.N.; KOVALEVA, S.A.; YEMEL'YANOV, Ye.M.;
       SHIMKUS, K.M.

Uranium and organic matter in the sediments of the Black and
Mediterranean Seas. Geokhimiia no.3:302-313 Mr '65.   (MIRA 18:7)

YEMEL'YANOV, Ye.M.; SHIMKUS, K.M.

Study of the variability of deep-sea sediments in the Black
Sea. Okeanologiia 2 no.6:1040-1049 '62.   (MIRA 17:2)

1. Chernomorskaya eksperimental'naya nauchno-issledovatel'-
skaya stantsiya Instituta okeanologii AN SSSR.

YEMEL'YANOV, Ye.M.; SHIMKUS, K.M.

Recent data on deep-sea Neo-Euxinic deposits of the Black Sea.
Okeanologiia 3 no.3:482-494 '63.   (MIRA 16:8)

1. Chernomorskaya eksperimental'naya nauchno-issledovatel'skaya
stantsiyu Instituta okeanologii AN SSSR.
          (Black Sea—Deep-sea deposits)

SHIMKUS, V. M.

Cand Med Sci - (diss) "Pneumoretroperitoneum in diagnostics of
kidney disorders." Simferopol', 1961. 15 pp; (Khar'kov State
Med Inst); 200 copies; price not given; (KL, 6-61 sup, 242)

SHIMKUS, Ye.M.

Replacement of part of the ureter by a loop of the small intestine.
Urologiia 24 no.6:50-51 '59.   (MIRA 13:12)
          (INTESTINES—TRANSPLANTATION)   (URETER—SURGERY)

NAUMENKAS, G.A. [Naumenkas, V.]; YURYAVICHYUS, P.Yu. [Jurevicius, P.];
MUNDRAVICHENE, Yu.V. [Mundraviciene, J.]; SHINKYAVICHYUTE, G.S.
[Sinkeviciute, G.]

Pollution of the lower Neman by waste waters from the pulp and
paper industry. Trudy AN Lit.SSR. Ser. B no.3:121-134 '65.
(MIRA 19:1)

1. Institut khimii i khimicheskoy tekhnologii AN Litovskoy SSR.
Submitted February 28, 1965.

SHIMMEL', N.

The fruit of American occupation. Sov.profsoiuzy 7 no.4:60-
63 Fe '59.   (Korea, South--Economic conditions)   (MIRA 12:5)

PARFENOV, V. V.; LOBANOV, Yu. A.; SHIMOLIN, L. V.

Investigating the law of magnetization approaching saturation in specimens made of fine ferromagnetic powders. Fiz. met. i metalloved. 14 no.4:503-511 O '62.   (MIRA 15:10)

1. Ural'skiy gosudarstvennyy universitet imeni A. M. Gor'kogo.

(Magnetization)   (Metal powders—Magnetic properties)

SHIMON, Aleksandr Alekseyevich; VINOGRADOV, V.L., red.; YELAGIN, A.S.,
tekhn.red.

[Technical means for cultural and educational work; textbook for
the schools for community center employees] Tekhnicheskie
sredstva kul'turno-prosvetitel'noi raboty; uchebnik dlia kul'turno-
prosvetitel'nykh shkol. Moskva, Izd-vo "Sovetskaia Rossiia,"
1959. 245 p.   (MIRA 13:5)
    (Electric apparatus and appliances) (Community centers)

SHILOV, Aleksandr Alekseyevich; KOROLOVA, I.M., red.

[Technical means of cultural and educational work; a textbook] Tekhnicheskie sredstva kul'turno-prosvetitel'-noi raboty; uchebnik, Izd.2., ispr. i dop. Moskva, Sovetskaia Rossiia, 1964. 325 p.   (MIRA 19:1)

SHIMON, K.

   High Productivity of Labor as an Important Factor for the Fulfillment of
the Production Program. Light Industry, #6:37:Jun 55

SHE7GI, K.

New Rationalizations at the "Stind" Industrial Enterprise. Light Industry, #6:40:Jun 55

SHIMON, Kalman [Simon, Kalman], dip.gornyy inzhener, dip. inzhener ekonomist

Some economical questions of longwall working. Izvestiia Bany XI
no.5:1-8 '61.

COUNTRY   : Bulgaria   H-23
CATEGORY   :

ABS. JOUR.   : RZKhim., No. 16   1959,   No.   58857

AUTHOR   : Shimon, Kh.
INST.   : Not given
TITLE   : Improving the Packaging of Canned Goods

ORIG. PUB.   : Khraniteina Promishlenost, 7, No 10, 39 (1958)

ABSTRACT   : The author describes a new process for the sealing
                of glass jars with pear preserves and jellies in
                which the neck of the jars is partially filled; a
                new corrugated paper container with nests for the
                jars is also described.
                                                A. Marin

CARD: 1/1
                              356

34433
S/185/61/006/006/011/030
D299/D304

24.3500 (1137,1138)

AUTHORS: Zapisochnyy, I.P., Kyshko, S.M., Shevera, V.S.,
Fel'tsan, P.V., and Shimon, L.L.

TITLE: Spectroscopic investigation of excitation functions
of atoms and molecules

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 6, no. 6, 1961,
770 - 773

TEXT: The experimental apparatus included a spectral device for
separating the lines and bands, an electrophotometer with a photo-
multiplier, and tubes filled with gas and vapor. The experimental
apparatus was described in detail in the references. It is noted
that recording devices of high sensitivity were required; this was
achieved by using a photomultiplier with a d.c. amplifier instead
of a photographic plate. Another requirement which had to be met
was homogeneity of the electron beam. In the references it was .
found that among secondary processes which cannot be neglected,
cascade transitions have a considerable effect on the spectral li-
nes of atoms. This fact was confirmed by the present investigation,
Card 1/3

S/185/61/006/006/011/030
D299/D304

Spectroscopic investigation of ...

conducted by the method of electron collisions. The excitation functions of cadmium-, natrium- and neon atoms were studied in detail, as well as those of diatomic nitrogen molecules and of nitric oxide and carbon monoxide. The measurements were conducted in the visible region of the spectrum, and for cadmium in the ultraviolet. A figure shows the following excitation functions of atoms: Na (λ = 5890, 5896 Å), Ne (λ = 5852 Å) and Cd (λ = 5086 Å). The investigated excitation function are characterized by the presence of several maxima, i.e. by fine structure (mainly due to the cascade transitions). The following excitation functions of diatomic molecules were investigated: of the second positive system of N_2 molecules and of the Ångstrom system of CO molecules, of the negative system N_2^+, of the comet system CO^+, and of a NO^+ system. A figure shows the excitation functions of the band of the second positive N_2 system, of the CO^+ system and of the NO^+ system, for electron energies between 10 and 150 ev. Whereas the excitation functions of bands of neutral molecules are of ordinary shape, those of molecular ions are of a complex structure, i.e. have several maxima. The most likely reason for the complex structure are

Card 2/3

/

S/185/61/006/006/011/030
D299/D304

Spectroscopic investigation of ...

elementary processes of dissociation and ionization of molecules, followed by recombination; the latter leads to a jumplike increase in the concentration of the ionic state. Such an interpretation of fine structure is supported by additional facts. Another figure, showing the excitation function of the N_2^+ band, illustrates the contribution due to the elementary processes, for various electron energies. There are 3 figures, 1 table and 8 references: 7 Soviet-bloc and 1 non-Soviet-bloc (in translation).

ASSOCIATION: Uzhhorode'kyy derzhuniversytet (Uzhhorod State University)

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Card 3/3

L 16156-63   EWP(q)/EWT(m)/BDS   AFFTC/ASD   JD
s/0058/63/000/006/D020/D020

ACCESSION NR: AR3005152

SOURCE: RZh. Fizika, Abs. 6 D121

AUTHORS: Shimon, L. L.; Zapesochny*y, I. P.

TITLE: Excitation functions of certain lines of cesium

CITED SOURCE: Dokl. i soobshch. Uzhgorodsk. un-t, Ser. fiz.-matem. i istor. n., no. 5, 1962, 44-46

TOPIC TAGS: cesium, excitation function , fine structure

TRANSLATION: The course of the excitation-curves for individual components of cesium line groups is studied at a pressure 4.2×10^{-4} mm Hg. The excitation-function curves of the principal-series doublet 4555 and 4593 A are very close, as are also the curves of the excitation functions of the sixth term of the diffuse series 5466 ($2^2P_{1/2}$--$8^2D_{3/2}$) and 5635 A ($2^2P_{3/2}$--$8^2D_{5/2}$). The excitation functions of the higher terms of the different series are very similar to one another. The resonance line has a very broad maximum, the other lines have a narrower one.

DATE ACQ: 15Jul63   SUB CODE: PH   ENCL: 00

Card 1/1

S/058/62/000/006/027/136
A061/A101

AUTHORS: Shimon, L. L., Zapesochnyy, I. P.

TITLE: A photoelectric study of the excitation function of the sodium resonance doublet

PERIODICAL: Referativnyy zhurnal, Fizika, no. 6, 1962, 16, abstract 6V98 ("Dokl. i soobshch. Uzhgorodsk. un-t. Ser. fiz.-matem. n.", 1961, no. 4, 46 - 48)

TEXT: Results of the measurement of the excitation function of the Na resonance doublet, conducted under clearer conditions of excitation (lower vapor pressures P and current density J) than those of previous investigations, are presented. The measurement conditions were as follows: $P = 2 \div 10 \cdot 10^{-4}$ mm Hg, $J = 0.3 \div 0.5$ ma/cm^2, velocity spread of electrons $\Delta V = 0.6 \div 0.7$ v. Four steps at 3.6; 4.1; 5.0, and 5.5 v were established on the ascending part of the curve. This points to the existence of a fin structure for the excitation func- tion of Na. On an increase of pressure, the curve maximum at $4 \cdot 10^{-4}$ mm Hg and ~ 15 v shifted toward low potentials in some contradiction with Haft's (Z. Phys., 1933, v. 82, 73) findings. [Abstracter's note: Complete translation]
Card 1/1

S/051/62/013/005/001/017
E032/E314

AUTHORS: Zapesochnyy, I.P. and Shimon, L.L.

TITLE: A study of the optical excitation functions of sodium
              by the photoelectric method

PERIODICAL: Optika i spektroskopiya, v. 13, no. 5, 1962,
              621 - 625

TEXT: It is noted that the excitation functions of alkali
metals have not been extensively investigated. It has been shown
in a previous paper (I.P. Zapesochnyy, Vestn. LGU, no. 11, 67,
1954) that it is necessary to use low pressures and low current
densities to reduce to a minimum/distortion of the excitation
curve by extraneous effects. The aim of the present work was to
investigate the optical excitation functions of sodium by the
photoelectric method in the visible part of the spectrum, with
particular attention to the resonance doublet of sodium. Prelim-
inary results have been briefly reported elsewhere (Dok. i soobshch.
Uzhgorodskogo un-ta, ser. fiz.-mat. nauk, no. 4, 46, 1961) by the
present authors. The method and apparatus employed were largely
similar to those described in the first reference mentioned above.
Card 1/4

S/051/62/013/005/001/017
E032/E314

A study of ....

The excitation chamber was made of molybdenum glass and was heated electrically to obtain the necessary vapour pressure of sodium. The spectral lines were recorded by the ФЭУ-17 (FEU-17) photomultiplier and the УМ-2 (UM-2) monochromator was used as the spectral instrument. Preliminary experiments showed that the oxide-coated cathode, used to produce the electron beam, operated satisfactorily only when the sodium vapours were exceedingly pure and this was achieved by multiple vacuum distillation. Examination of the excitation function for the resonance lines 5890/5896 Å of sodium showed that they had a very flat maximum between 8 and 15 V. It was found that the present results were somewhat different from the experimental data of Haft (Zs.Phys., 82, 73, 1933) and quite different from the theoretical points of Vel'dre (Vestnik AN Latv. SSR, no. 5, 106, 1956). Fig. 2 shows the initial part of the excitation curve for the above resonance line. This part of the curve was examined very care- fully, using a mono energetic beam in which 90% of the electrons had a velocity spread of not more than 0.6 eV (indicated by the volt.-amp. characteristic of the beam and its differential curve

Card 2/4

A study of ....

shown in Fig. 2 below the resonance curve). As can be seen, this part of the resonance curve has a fine structure: there are definite breaks in the curve at 2.9, 4, 4.9 and 5.4 eV. More mono energetic beams will be necessary to resolve this fine structure. Next, a study was made of the effect of pressure and the electron current density on the form of the excitation function for the above doublet. It was found that points obtained at 2.5×10^{-4} and 5×10^{-4} mm Hg lay on the same curve but points obtained at 10^{-3} mm Hg fell on a different curve. Similarly, points obtained at current densities of 1.5×10^{-4} and 3.6×10^{-4} A/cm^2 were found to lie on the same curve, while experimental points obtained at 10^{-3} A/cm^2 no longer did so. Thus, pressures much less than 10^{-3} mm Hg and electron current densities not exceeding 5×10^{-4} A/cm^2 must be used to obtain the correct form of the excitation function. An investigation was also made of the excitation functions of the lines 5149/54, 5683/88 and 4979/83 Å. It was found that the excitation functions for lines belonging to

Card 3/4

A study of ....

S/051/62/013/005/001/017
E032/E314

different series are of a different form. A fine structure was
found for 5683/88 and 4979/83 A . It is concluded that to
obtain a correct explanation of the nature of the fine structure,
similar measurements should be carried out with other alkali
metals, using more mono energetic electrons.   There are
5 figures.

SUBMITTED: October 3, 1961

Fig. 2:
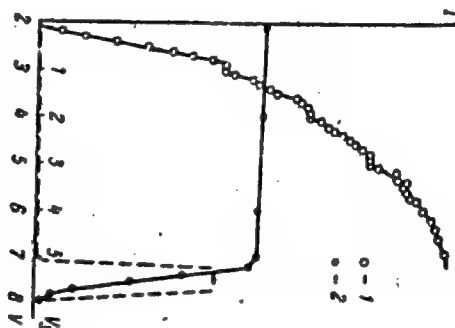
Card 4/4

S. 0058/63/000/011/D020/D020

SOURCE   Ref. zh. Fizika. Abs. 11D123

AUTHOR   Shimon, L. L.

... potassium spark lines

... Uzhgorodsk. un-t. v. 49, 1962, 51-58

TOPIC TAGS   excitation function, excitation cross section, potassium spark line

TRANSLATION   Measures the excitation functions of 6 K lines: 4388, 4466, 4505, ... Describes the device and operation of the atomic excita- ... are compared with those obtained previously by Volkovay (Journal

SUB CODE: NP

Card 1/1

SHIMON, L.L.

Effective cross sections of the excitation of some potassium
spark lines. Nauk. zap. UzhGU 49:51-58 '62.   (MIRA 18:2)

L 18151-63   EWP(q)/EWT(m)/BDS   AFFTC/ASD   JD/JG
                                                        S/0048/63/027/008/1037/1039
ACCESSION NR: AP3004495

AUTHOR: Zapesochnyy, I.P.; Shimon, L.L.

TITLE: Excitation functions for some alkali metal atoms /Report presented at the
Second All-Union Conference on the Physics of Electronic and Atomic Collisions held
in Uzhgorod 2-9 Oct 1962/

SOURCE: AN SSSR, Izvestiya, ser.fiz.,v.27, no.8, 1963, 1037-1039

TOPIC TAGS: excitation function , electron impact, spectrum line , Na, Rb, Cs

ABSTRACT: Hitherto certain experimental difficulties have hindered systematic in-
vestigation of the excitation cross sections and functions of alkali metal atoms.
The purpose of the present work was systematic investigation of excitation of sod-
ium, rubidium and cesium by electron impact, using photoelectric recording of the
weaker lines, since this is more sensitive than photographic recording. The experi-
mental set-up has been described earlier (I.P.Zapesochnyy, Vestnik Leningrad un-
ta.,No.11, 1954). The line radiation was detected by means of cooled photomulti-
pliers. The vapor pressure interval and electron density were selected to minimize
their distorting effects. Particular attention was given to insuring a monoenerge-
tic beam; the energy straggling did not exceed 0.5-0.8 eV. Some of the results are

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presented in Figs.1,2,3 and 4 (Enclosures). The excitation functions for the reso-
nance (principal series) lines are similar (Fig.1) and have a broad peak. The
sharp series excitation functions have sharp peaks and are also similar, except
that the curve for Cs has an additional minor peak. The diffuse line series func-
tions differ: the Na curve has a wide peak; Rb and Cs much narrower peaks. It also
follows from the experimental results that the excitation functions for the compo-
nents of a spectral doublet are virtually identical, even though different upper
or lower levels may be involved. The excitation functions for rubidium were ob-
tained in the present study for the first time. Orig.aft.has: 4 figures.

ASSOCIATION: Kafedra optiki Fiziko-matematicheskogo fakul'teta Uzhgorodskogo gos.
universiteta (Chair of Optics, Dept.of Physics & Mathematics, Uzhgorod State Univ.)

SUBMITTED: 00

DATE ACQ: 26Aug63

ENCL: 03

SUB CODE: PH

NO REF SOV: 004

OTHER: 003

Card 2/5
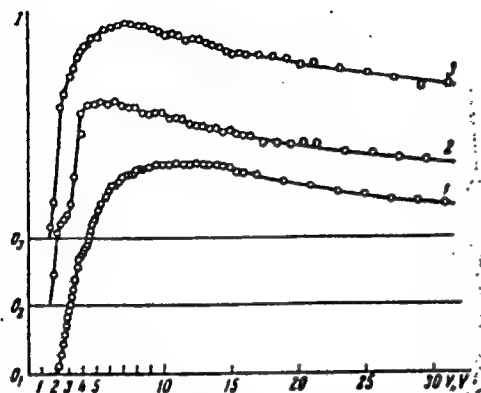
Fig.1. Excitation functions of the
principal (resonance) lines: 1 - Na
5890/96 Å, 2 - Rb 7800 Å, 3 - Cs
8521 Å.

Fig.2. Excitation functions of the
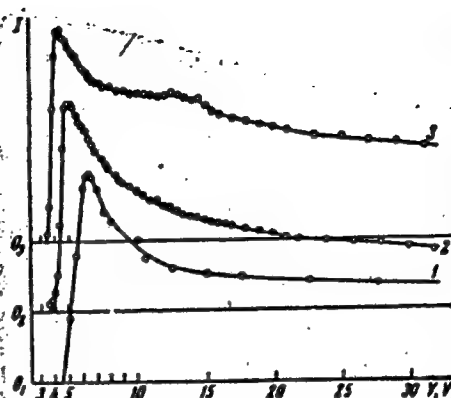sharp series lines: 1 - Na 5133 Å,
2 - Rb 6159 Å, 3 - Cs 6586 Å.

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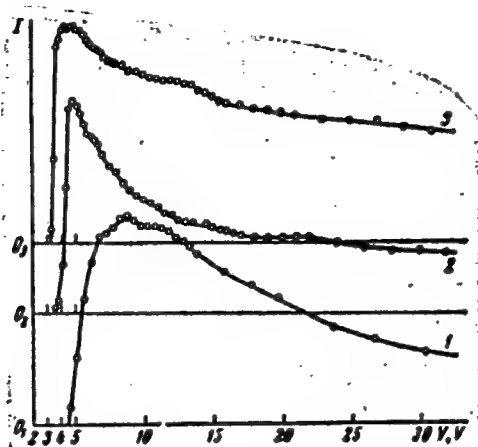Fig.3. Excitation functions of the diffuse series
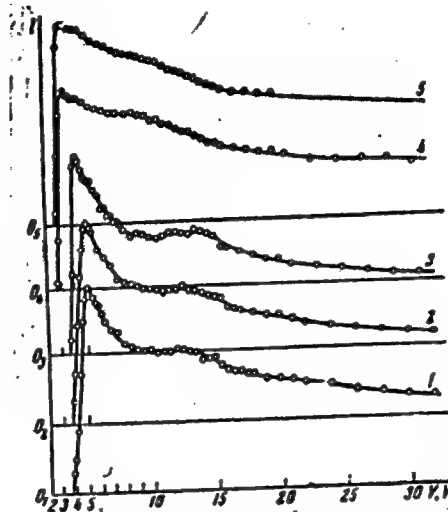lines: 1 - Na 4982/78 Å, 2 - Rb 6299 Å, 3 - Cs 6983 Å.

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Fig.4. Excitation functions of cesium
lines: 1 & 2 - components of the sixth
member of the diffuse series: 5635 &
5466 Å;   3 - fourth member of the sharp
series: 5746 Å;   4 & 5 - components of
the second doublet of the principal
series: 4555 & 4593 Å.

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ACCESSION NR: AP4039699

S/0051/64/016/006/0929/0935

AUTHORS: Zapesochny*y, I. P.; Shimon, L. L.

TITLE: Excitation functions of cesium spectral lines

SOURCE: Optika i spektroskopiya, v. 16, no. 6, 1964, 929-935

TOPIC TAGS: cesium, spectral analysis, spectrum line, excitation spectrum, line spectrum, doublet splitting

ABSTRACT: The excitation functions of 25 lines belonging to the principal, sharp, diffuse, and fundamental series of the cesium atom were investigated by means of a setup essentially similar to that described by the authors earlier (Vestn. LGU, no. 11, 67, 1954 and Naukovi zapysky UzhDU, no. 39, 49, 1962), using photoelectric recording of the weak intensities. The tests were made at low vapor pressure and at low density of the exciting monokinetic electrons. The excitation functions of each investigated line were measured

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several times with several different variants of tube and electrode
configurations. The beam of exciting electrons was perpendicular
to the entrance slit of the monochromator in some tests and parallel
in others, the results being practically the same, so that only
data with perpendicular orientation are reported. The laws govern-
ing the behavior of the excitation functions of the lines in each
series are established. Secondary maxima were obtained for the ex-
citation functions of resonance lines. No difference was observed
in the behavior of the excitation functions of the doublet compo-
nents. Some peculiarities in the excitation functions of the funda-
mental series suggest that cascade transitions from the F levels to
the lower D levels and then to the resonance P levels of cesium may
cause an anomalous behavior of the excitation functions of the reso-
nance doublet. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: None

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ACCESSION NR: AP4039699

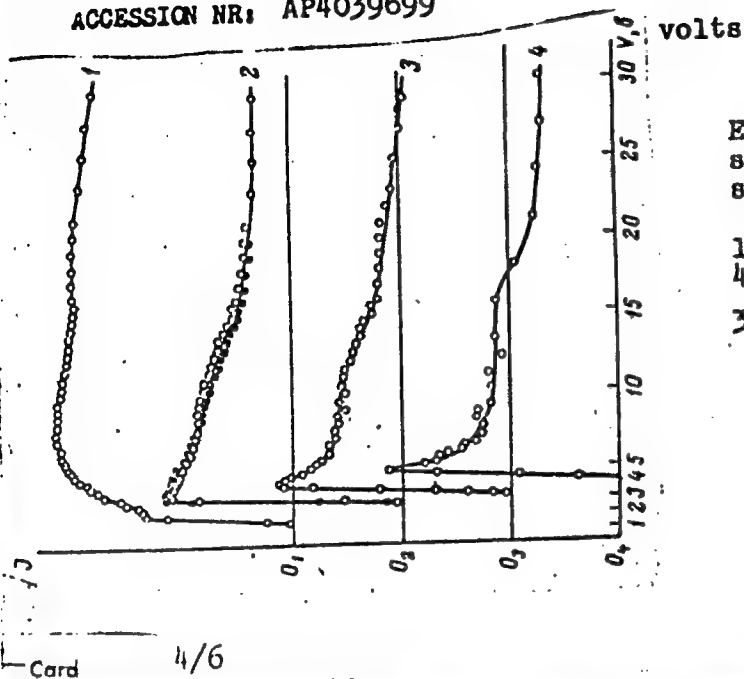SUBMITTED: 18Apr63   DATE ACQ: 24Jun64   ENCL: 03

SUB CODE: OP   NR REF SOV: 006   OTHER: 002
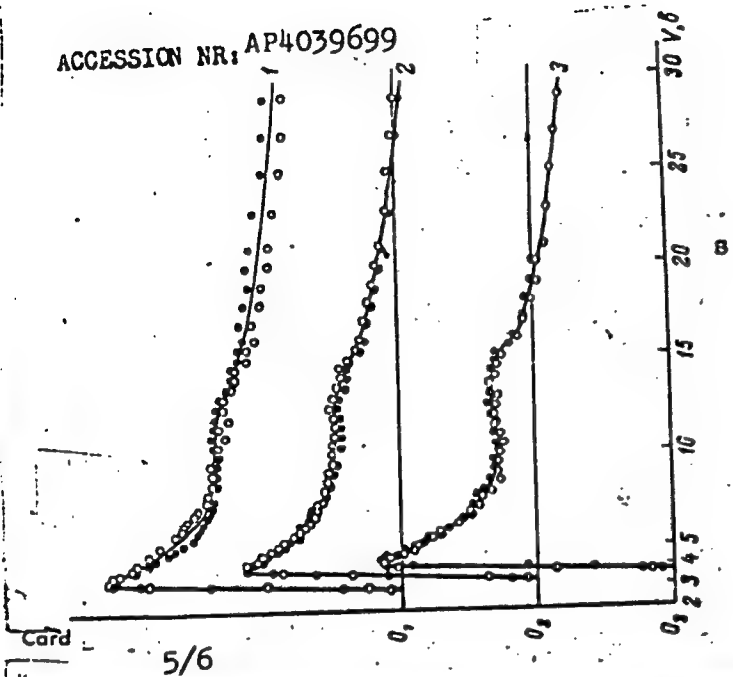
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ACCESSION NR: AP4039699

Excitation functions of
spectral lines of principal
series.

1 - 8521 Å; 2 - 4555 and
4593 Å (black circles);
3 - 3876 Å; 4 - 3611 Å.

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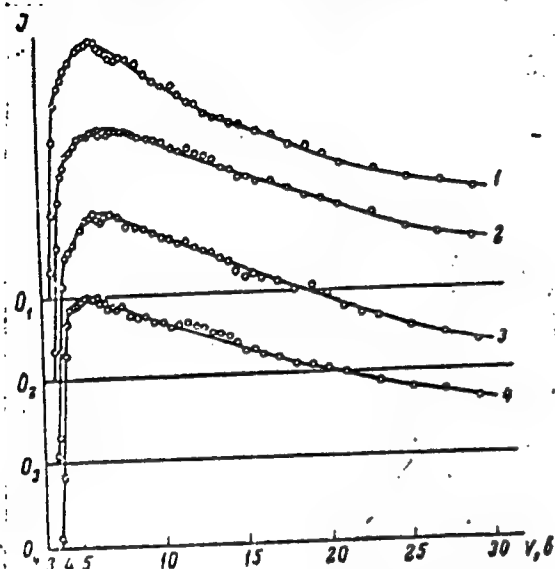
ACCESSION NR: AP4039699

ENCLOSURE: 02

Excitation functions of
spectral lines of sharp
series.

1 - 7609 (black circles)
and 7944 Å; 2 - 6354 Å
(black circles) and 6586
Å; 3 - 5568 (black circles)
and 5746 Å.

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ACCESSION NR: AP4039699

ENCLOSURE: 03

Excitation function of
spectral lines of the
fundamental series.

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ACCESSION NR: AP4042978   S/0051/64/017/001/0024/0029

AUTHOR: Shimon, L. L.

TITLE: Excitation functions of rubidium spectral lines

SOURCE: Optika i spektroskopiya, v. 17, no. 1, 1964, 24-29

TOPIC TAGS: spectrum line, rubidium, excitation spectrum, alkali metal, atomic spectrum, ionization spectrum

ABSTRACT: The experimental setup and the procedure are the same in this work as in earlier studies (with I. P. Zapesochny*y, Opt. i spektr. v. 13, 621, 1962 and v. 16, 929, 1964) devoted to the excitation functions of sodium and cesium, using a highly monokinetic electron beam and photoelectric recording. A total of twenty lines of the principal and secondary series were studied, along with the excitation functions of 10 ion lines of rubidium. The rubidium vapor pressure (0.0002--0.00065 mm Hg) and electron current densities

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ACCESSION NR: AP4042978

$(0.0002x$ - 0.0008 A/cm^2) were low enough to exclude the effect of these quantities on the course of the excitation functions. As in other alkali-metal atoms, the resonance-line excitation function exhibits a broad maximum, which narrows appreciably on going to the next terms of the principal series. A distinct difference is established between the form of the excitation functions of atomic lines and lines emitted by singly charged ions. The identity of the excitation functions of doublet components, previously established for cesium, is confirmed also for rubidium. Secondary maxima are observed on the rising part of the resonance-line excitation function. A table of the level transitions is included. "The author thanks I. P. Zapesochny*y for suggesting the topic and for continuous interest." Orig. art. has: 6 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 21Oct63   ENCL: 00

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ACCESSION NR: AP4042978

SUB CODE: OP   NR REF SOV: 006   OTHER: 000

3/3

L 9195-66   EWT(l)/EWT(m)/EWP(b)/EWP(t)   LIP(c)   JD/JG

ACC NR: AR6000113   SOURCE CODE: UR/0058/65/000/008/D023/D023

SOURCE: Ref. zh. Fizika, Abs. 8D182   74

AUTHORS: Zapesochnyy, I. P.; Shimon, L. L.   B

ORG: none

TITLE: Excitation function of spectral lines of rubidium and cesium

CITED SOURCE: Tr. Komis. po spektroskopii. AN SSSR. M., t. 2, vyp. 1, 1964, 175-179

TOPIC TAGS: rubidium, cesium, light excitation, spectral line, excitation cross section

TRANSLATION: The electron-impact method and photoelectric registration are used to study the excitation functions of 25 spectral lines of Cs and 15 lines of Rb, belonging to the principal, secondary, and fundamental series. There is no great difference in the behavior of the excitation functions of the lines of the principal and secondary series which are characterized by a sharp growth of the effective cross section of excitation and the presence of a sharp maximum at a distance of approximately 1 volt beyond their excitation potential. The excitation function of the fundamental series is characterized by rounded maxima which lie several volts beyond the excitation potentials. The excitation functions of the resonant lines have an anomalously broad maximum (relative to the other lines). A fine structure was observed from the rising part of the curves.

SUB CODE: 20/   SUBM DATE: none/   ORIG REF: 000/   OTH REF: 000

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